What is claimed is:

1. Method for generating an up-sampled version of a time discrete audio signal, the audio signal being sampled at a first sampling rate, comprising the following
5 steps:

providing an analysed version of the audio signal, the analysed version including L analysis subband signals obtained by an L-channel analysis filter bank, wherein L designates a number of filter bank channels of the L-channel analysis filter
10 bank;

filtering the analysed version of the audio signal using a QL- channel synthesis filter bank having L-low-band channels and L (Q-1) high band channels to obtain the up-sampled version of the time discrete audio signal, the up-sampled version having
15 a second sampling rate being equal to the first sampling rate multiplied by Q, wherein Q designates a factor,

wherein, in the step of filtering, only the L low-band channels of the synthesis filter bank are used so that the upsampled version of the audio signal has the same
20 bandwidth as the audio signal, or

wherein, before the step of filtering, a number of subband signals on the L low band channels are patched to a number of high band channels so that the upsampled version of the audio signal has an extended bandwidth.
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2. Method in accordance with claim 1, in which the step of providing includes the following sub-steps:

feeding the time-discrete audio signal into the L-channel analysis filter bank,
30 wherein one of the L-channels has a bandpass filter and a subsequently-connected decimator, the decimator having a decimation factor equal to L.

3. Method in accordance with claim 1, in which the step of providing includes the following sub-steps:

receiving a bit stream at a decoder;

demultiplexing quantized subband samples with bit stream; and

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re-quantizing the quantized subband samples to obtain the analysed version of the audio signal.

4.   Method in accordance with claim 1, in which the step of filtering includes the

10   following sub-steps for a channel of the L low-band channels:

interpolating a channel signal by an interpolation factor of QL to obtain an interpolated channel signal; and

15   filtering the interpolated channel signal by a bandpass filter for the channel.

5.   Method in accordance with claim 1, in which the step of filtering includes the following sub-steps for a channel of the L (Q-1) high-band channels:

20   feeding a bandpass filter for the channel with zeros.

6.   Method in accordance with claim 4, in which the step of filtering includes a step of summing filter outputs of the L low-band channels.

25   7.   Method in accordance with claim 1, in which the factor Q is selected such that a product of Q and L has an integer value.

8.   Method in accordance with claim 1, in which the QL-channel synthesis filter bank is implemented as a frequency/time transform having QL-frequency coefficient

30   inputs as filter bank channels, wherein the L (Q-1) frequency coefficients are set to zero.

9.   Apparatus for generating an up-sampled version of a time discrete audio signal, the audio signal being sampled at a first sampling rate, comprising:

means for providing an analysed version of the audio signal, the analysed version including L analysis subband signals obtained by an L-channel analysis filter bank, wherein L designates a number of filter bank channels of the L-channel analysis filter bank;

a QL channel synthesis filter bank having L-low-band channels and L (Q-1) high band channels to obtain the up-sampled version of the time discrete audio signal, the up-sampled version having a second sampling rate being equal to the first sampling rate (f_s) multiplied by Q, wherein Q designates a factor,

wherein, in the synthesis filter bank, only the L low-band channels of the synthesis filter bank are used so that the upsampled version of the audio signal has the same bandwidth as the audio signal, or

wherein a number of subband signals on the L low band channels are patched to a number of high band channels of the synthesis filter bank so that the upsampled version of the audio signal has an extended bandwidth.